



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,697	10/11/2001	Mikhail Boroditsky	03493.00175	6290

22907 7590 08/24/2004

BANNER & WITCOFF
1001 G STREET N W
SUITE 1100
WASHINGTON, DC 20001

EXAMINER

WANG, QUAN ZHEN

ART UNIT	PAPER NUMBER
----------	--------------

2633

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/973,697	Applicant(s) BORODITSKY ET AL.	
	Examiner Wang Quan-Zhen	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/11/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/11/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>21</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because of the following reasons:

Referring Fig. 4, the stacker and unstacker should be depicted separately. Even though the applicants pointed out that "The stacker does not include circulator C2 and the unstacker correspondingly does not include circulator C1" (see Page. 10, lines 17-18) in the "Detailed description of the referred embodiments", that statement is not reflected in Fig.4. The stacker and unstacker should be depicted separately to match with the figure description.

Referring to Fig. 5, the port numbers of circulator C1 are labeled incorrectly. According to widely accepted labeling convention in the art, the labeled port 3 should be port 2 and the labeled port 2 should be port 3.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The

Art Unit: 2633

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. More detailed descriptions for Figs. 14a and 14b are needed in order for one of ordinary skill in the art to understand how the "routing properties of an Arrayed Waveguide Grating (AWG)" were utilized to stack a serial stream of packets and unstack a composite packet. Two cited references (Page 16, Paragraph 73, Lines 10-14) do not explicitly explain how to stack a serial stream of packets to form a composite packet and unstack a composite packet to a serial stream of packets using "the routing properties of an AWG".

The examiner respectfully reminds the applicants that no new subject matter may be added.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2633

3. Claims 10 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 10, it is not clear how the fiber Bragg grating is incorporated with the optical switch in the claim 7, which the claim is dependent to.

Regarding claim 15, it is not clear how the fiber Bragg grating is incorporated with the "method" of claim 14.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Art Unit: 2633

4. Claims 1, and 3-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Adams et al. (U.S. Patent 6,748,175 B1).

Regarding claim 1, Adams et al. teach a WDM packet-switched optical ring network (fig. 1), having a plurality of nodes (fig. 1, elements 110-116) connected, the network can create a composite packet (Col. 4, lines 23-25) from a node, transmit packets from nodes to nodes (column 4, lines 10 -12). Each of the nodes can extract (drop) wavelength-multiplexed signals (composite packets) from the ring (column 4, lines 12-17), insert (create and add) wavelength-multiplexed signals (composite packets) back to the ring network (column 4, lines 17-19).

Regarding claims 3 and 4, Adams et al. disclosed that the packets extracted (dropped) or inserted (added) are comprising multi-wavelengths packets (column 4, lines 9-26).

Regarding claim 5, Adams further teaches serially generating a plurality of packets (Col. 4, lines 23-25. Note that in coming information packets are multiplexed, or serially generated), each packet being generated at a different wavelength (Col. 4, lines 30-33); and stacking the plurality of packet (Col. 4, lines 34-35).

Regarding claim 6, the connection between any nodes in the ring network taught by Adams et al. (fig. 1) can be considered a point-to-point network, for example, the elements 130 and 111 form a point-to-point network.

Regarding claim 7, Adams et al. teach a method to bypass the signal at a given node depends on the state of OADM switch (figs. 2 and 3).

Art Unit: 2633

Regarding claim 8, Adams further teaches to further distribute packets dropped from the packet backbone network (fig. 1) 140 by using WDM techniques (Hub 130, fig. 2) to a plurality of nodes (110, 111, and 112).

Regarding claim 9, Adams et al. teach to extract (drop) a specific wavelength band (column 4, lines 14-17, for example λ_1 , at Node 110), which inherently indicates that the dropped signals could be detected in parallel.

Regarding claim 10 as it is understood in view of above 112 problem, it is the intrinsic property of a wavelength fiber Bragg grating (FBG) to reflect the wavelength which matches with that of the FBG and transparently pass other wavelengths.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2, 11, 14, 15, and 16 are rejected under 35 U.S.C. 103(a) as being anticipated by Adams et al. (U.S. Patent 6,748,175 B1) in view of Hui Zang et al. (Photonic slot routing in all-optical WDM Mesh Networks, Global Telecommunications Conference -Globecom'99).

Regarding claims 2, 11, 14 and 16, Adams et al. teach WDM ring network (fig. 1), having a plurality of nodes (fig. 1, elements 110-116) connected, can transmit packets

Art Unit: 2633

from nodes to nodes (column 4, lines 10 –12). Each of the nodes can extract (drop) wavelength-multiplexed signals (composite packets) from the ring (column 4, lines 12-17), insert (create and add) wavelength-multiplexed signals (composite packets) back to the ring network (column 4, lines 17-19). Adams et al differ from the claimed invention in that Adams et al. do not specifically teach to add packets at a specific time slot. Hui Zang et al. teach to add packets from a node to a newly created photonic slot if no other slots are contending for the link (page 1449, paragraph 8). It would have been obvious to a person of ordinary skilled in the art to add packets to the ring network taught by Adams et al. using the method taught by Hui Zang et al. at the time the invention was made in order to avoid packet collision with other packets transmitting in the ring network.

Regarding claim 15 as it is understood in view of above 112 problem, it is the intrinsic property of a wavelength fiber Bragg grating (FBG) to reflect the wavelength which matches with that of the FBG and transparently pass other wavelengths.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Milton et al. (U.S. Patent 6,084,694) disclosed a WDM optical ring network with a plurality of nodes. Protocol independent connections can be made between any nodes on the ring.

Art Unit: 2633

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wang Quan-Zhen whose telephone number is (703) 305-8392. The examiner can normally be reached on 8:30 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan Jason can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw



M. R. SEDIGHIAN
PRIMARY EXAMINER